Tennessee Gas Pipeline Company

Docket No. SEC 2008-____

Application of Tennessee Gas Pipeline Company
For a Certificate of Site and Facility
For the Concord Lateral Expansion Project

EXHIBIT G

Federal Energy Regulatory Commission's
Upland Erosion Control, Revegetation,
And Maintenance Plan

UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN

01/17/2003 VERSION

UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN

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UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN (PLAN)

I. APPLICABILITY

A. The intent of this Plan is to assist applicants by identifying baseline mitigation measures for minimizing erosion and enhancing revegetation. The project sponsors should specify in their applications for a FERC Certificate (Certificate) any individual measures in this Plan they consider unnecessary, technically infeasible, or unsuitable due to local conditions and to fully describe any alternative measures they would use. Applicants should also explain how those alternative measures would achieve a comparable level of mitigation.

Once a project is certificated, further changes can be approved. Any such changes from the measures in this Plan (or the applicant's approved plan) will be approved by the Director of the Office of Energy Projects (Director), upon the applicant's written request, if the Director agrees that an alternative measure:

1. provides equal or better environmental protection;

2. is necessary because a portion of this Plan is infeasible or unworkable based on project-specific conditions; or

3. is specifically required in writing by another Federal, state, or Native American land management agency for the portion of the project on its land or under its jurisdiction.

Any requirements in this Plan to file material with the Secretary of the FERC (Secretary) do not apply to projects undertaken under the provisions of the blanket certificate program. This exemption does not apply to a request for alternative measures.

Project-related impacts on wetland and waterbody systems are addressed in the staff's Wetland and Waterbody Construction and Mitigation Procedures (Procedures).

II. SUPERVISION AND INSPECTION

A. ENVIRONMENTAL INSPECTION

1. At least one Environmental Inspector is required for each construction spread during construction and restoration (as defined by section V). The number and experience of Environmental Inspectors assigned to each construction spread should be appropriate for the length of the construction spread and the number/significance of resources affected.

2. Environmental Inspectors shall have peer status with all other activity inspectors.

3. Environmental Inspectors shall have the authority to stop activities that violate the environmental conditions of the Certificate, state and Federal environmental permit conditions, or landowner requirements; and to order appropriate corrective action.

B. RESPONSIBILITIES OF ENVIRONMENTAL INSPECTORS

At a minimum, the Environmental Inspector(s) shall be responsible for:

1. Ensuring compliance with the requirements of this Plan, the Procedures, the environmental conditions of the Certificate authorization, the mitigation measures proposed by the applicant (as approved and/or modified by the Certificate), other environmental permits and approvals, and environmental requirements in landowner easement agreements;

2. Identifying, documenting, and overseeing corrective actions, as necessary to bring an activity back into compliance;

3. Verifying that the limits of authorized construction work areas and locations of access roads are properly marked before clearing;

4. Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements along the construction work area;

5. Identifying erosion/sediment control and soil stabilization needs in all areas;

6. Ensuring that the location of dewatering structures and slope breakers will not direct water into known cultural resources sites or locations of sensitive species;

7. Verifying that trench dewatering activities do not result in the deposition of sand, silt, and/or sediment near the point of discharge into a wetland or waterbody. If such deposition is occurring, the dewatering activity shall be stopped and the design of the discharge shall be changed to prevent reoccurrence;

8. Ensuring that subsoil and topsoil are tested in agricultural and residential areas to measure compaction and determine the need for corrective action;

9. Advising the Chief Construction Inspector when conditions (such as wet weather) make it advisable to restrict construction activities to avoid excessive rutting;

10. Ensuring restoration of contours and topsoil;

11. Verifying that the soils imported for agricultural or residential use have been certified as free of noxious weeds and soil pests, unless otherwise approved by the landowner;

12. Determining the need for and ensuring that erosion controls are properly installed, as necessary to prevent sediment flow into wetlands, aterbodies, sensitive areas, and onto roads;

13. Inspecting and ensuring the maintenance of temporary erosion control measures at least:

    a. on a daily basis in areas of active construction or equipment operation;

    b. on a weekly basis in areas with no construction or equipment operation; and

    c. within 24 hours of each 0.5 inch of rainfall;

14. Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification;

15. Keeping records of compliance with the environmental conditions of the FERC certificate, and the mitigation measures proposed by the project sponsor in the application submitted to the FERC, and other Federal or state environmental permits during active construction and restoration; and

16. Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase.

III. PRECONSTRUCTION PLANNING

The project sponsor shall do the following before construction:

A. CONSTRUCTION WORK AREAS

1. Identify all construction work areas (e.g., construction right-of-way, extra work space areas, pipe storage and contractor yards, borrow and disposal areas, access roads, etc.) that would be needed for safe construction. The project sponsor must ensure that appropriate cultural resources and biological surveys have been conducted.

2. Project sponsors are encouraged to consider expanding any required cultural resources and endangered species surveys in anticipation of the need for activities outside of certificated work areas.

B. DRAIN TILE AND IRRIGATION SYSTEMS

1. Attempt to locate existing drain tiles and irrigation systems.

2. Contact landowners and local soil conservation authorities to determine the locations of future drain tiles that are likely to be installed within 3 years of the authorized construction.

3. Develop procedures for constructing through drain-tiled areas, maintaining irrigation systems during construction, and repairing drain tiles and irrigation systems after construction.

4. Engage qualified drain tile specialists, as needed to conduct or monitor repairs to drain tile systems affected by construction. Use drain tile specialists from the project area, if available.

C. GRAZING DEFERMENT

Develop grazing deferment plans with willing landowners, grazing permittees, and land management agencies to minimize grazing disturbance of revegetation efforts.

D. ROAD CROSSINGS AND ACCESS POINTS

Plan for safe and accessible conditions at all roadway crossings and access points during construction and restoration.

E. DISPOSAL PLANNING

Determine methods and locations for the disposal of construction debris (e.g., timber, slash, mats, garbage, drilling fluids, excess rock, etc). Off-site disposal in other than commercially operated disposal locations is subject to compliance with all applicable survey, landowner permission, and mitigation requirements.

F. AGENCY COORDINATION

The project sponsor must coordinate with the appropriate local, state, and Federal agencies as outlined in this Plan and in the Certificate.

1. Obtain written recommendations from the local soil conservation authorities or land management agencies regarding permanent erosion control and revegetation specifications.

2. Develop specific procedures in coordination with the appropriate agency to prevent the introduction or spread of noxious weeds and soil pests resulting from construction and restoration activities.

G. STORMWATER POLLUTION PREVENTION PLAN

Make available on each construction spread the Stormwater Pollution Prevention Plan prepared for compliance with the U.S. Environmental Protection Agency's National Stormwater Program General Permit requirements.

IV. INSTALLATION

A. APPROVED AREAS OF DISTURBANCE

1. Project-related ground disturbance shall be limited to the construction right-of-way, extra work space areas, pipe storage yards, borrow and disposal areas, access roads, and other areas approved in the Certificate. Any project-related ground disturbing activities outside these Certificated areas, except those needed to comply with the Plan and Procedures (e.g., slope breakers, energy-dissipating devices, dewatering structures, drain tile system repairs) will require prior Director approval. All construction or restoration activities outside of the Certificated areas are subject to all applicable survey and mitigation requirements.

2. The construction right-of-way width for a project shall not exceed 75 feet or that described in the FERC application unless otherwise modified by a Certificate condition. However, in limited, non-wetland areas, this construction right-of-way width may be expanded by up to 25 feet without Director approval to accommodate full construction right-of-way topsoil segregation and to ensure safe construction where topographic conditions (such as side-slopes) or soil limitations require it. Twenty-five feet of extra construction right-of-way width may also be used in limited, non-wetland or non-forested areas for truck turn-arounds where no reasonable alternative access exists.

   Project use of these additional limited areas is subject to landowner approval and compliance with all applicable survey and mitigation requirements. When such additional areas are used, each one should be identified and the need explained in the weekly or biweekly construction reports to the FERC, if required. The following material should be included in the reports:

   a. the location of each additional area by station number and reference to a previously filed alignment sheet, or updated alignment sheets showing the additional areas;

   b. identification of where the Commission's records contain evidence that the additional areas were previously surveyed; and

c. a statement that landowner approval has been obtained and is available in project files.

Prior written approval of the Director is required when the Certificated construction right-of-way width would be expanded by more than 25 feet.

B. TOPSOIL SEGREGATION

1. Unless the landowner or land management agency specifically approves otherwise, prevent the mixing of topsoil with subsoil by stripping topsoil from either the full work area or from the trench and subsoil storage area (ditch plus spoil side method) in:

   a. actively cultivated or rotated croplands and pastures;

   b. residential areas;

   c. hayfields; and

   d. other areas at the landowner's or land managing agency's request.

2. In residential areas importation of topsoil is an acceptable alternative to topsoil segregation.

3. In deep soils (more than 12 inches of topsoil), segregate at least 12 inches of topsoil. In soils with less than 12 inches of topsoil make every effort to segregate the entire topsoil layer.

4. Where topsoil segregation is required, maintain separation of salvaged topsoil and subsoil throughout all construction activities.

5. Segregated topsoil may not be used for padding the pipe.

C. DRAIN TILES

1. Mark locations of drain tiles damaged during construction.

2. Probe all drainage tile systems within the area of disturbance to check for damage.

3. Repair damaged drain tiles to their original or better condition. Do not use filter-covered drain tiles unless the local soil conservation authorities and the landowner agree. Use qualified specialists for testing and repairs.

4. For new pipelines in areas where drain tiles exist or are planned, ensure that the depth of cover over the pipeline is sufficient to avoid interference with drain tile systems. For adjacent pipeline loops in agricultural areas, install the new pipeline with at least the same depth of cover as the existing pipeline(s).

D. IRRIGATION

Maintain water flow in crop irrigation systems, unless shutoff is coordinated with affected parties.

E. ROAD CROSSINGS AND ACCESS POINTS

1. Maintain safe and accessible conditions at all road crossings and access points during construction.

2. If crushed stone access pads are used in residential or active agricultural areas, place the stone on synthetic fabric to facilitate removal.

F. TEMPORARY EROSION CONTROL

Install temporary erosion controls immediately after initial disturbance of the soil. Temporary erosion controls must be properly maintained throughout construction (on a daily basis) and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanen' erosion controls or restoration is complete.

1. Temporary Slope Breakers

a. Temporary slope breakers are intended to reduce runoff velocity and divert water off the construction right-of-way. Temporary slope breakers may be constructed of materials such as soil, silt fence, staked hay or straw bales, or sand bags.

b. Install temporary slope breakers on all disturbed areas, as necessary to avoid excessive erosion. Temporary slope breakers must be installed on slopes greater than 5 percent where the base of the slope is less than 50 feet from waterbody, wetland, and road crossings at the following spacing (closer spacing should be used if necessary):

Slope (%)	Spacing (feet)
5 - 15	300
>15 - 30	200
>30	100

c. Direct the outfall of each temporary slope breaker to a stable, well vegetated area or construct an energy-dissipating device at the end of the slope breaker and off the construction right-of-way.

d. Position the outfall of each temporary slope breaker to prevent sediment discharge into wetlands, waterbodies, or other sensitive resources.

2. Sediment Barriers

a. Sediment barriers are intended to stop the flow of sediments and to prevent the deposition of sediments into sensitive resources. They may be constructed of materials such as silt fence, staked hay or straw bales, compacted earth (e.g., driveable berms across travelways), sand bags, or other appropriate materials.

b. At a minimum, install and maintain temporary sediment barriers across the entire construction right-of-way at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody, wetland, or road crossing until revegetation is successful as defined in this Plan. Leave adequate room between the base of the slope and the sediment barrier to accommodate ponding of water and sediment deposition.

c. Where wetlands or waterbodies are adjacent to and downslope of construction work areas, install sediment barriers along the edge of these areas, as necessary to prevent sediment flow into the wetland or waterbody.

3. Mulch

a. Apply mulch on all slopes (except in actively cultivated cropland) concurrent with or immediately after seeding, where necessary to stabilize the soil surface and to reduce wind and water erosion. Spread mulch uniformly over the area to cover at least 75 percent of the ground surface at a rate of 2 tons/acre of straw or its equivalent, unless the local soil conservation authority, landowner, or land managing agency approves otherwise in writing.

b. Mulch can consist of weed-free straw or hay, wood fiber hydromulch, erosion control fabric, or some functional equivalent.

c. Mulch before seeding if:

(1) final grading and installation of permanent erosion control measures will not be completed in an area within 20 days after the trench in that area is backfilled (10 days in residential areas), as required in section V.A.1; or

(2) construction or restoration activity is interrupted for extended periods, such as when seeding cannot be completed due to seeding period restrictions.

d. If mulching before seeding, increase mulch application on all slopes within 100 feet of waterbodies and wetlands to a rate of 3 tons/acre of straw or equivalent.

e. If wood chips are used as mulch, do not use more than 1 ton/acre and add the equivalent of 11 lbs/acre available nitrogen (at least 50 percent of which is slow release).

f. Ensure that mulch is adequately anchored to minimize loss due to wind and water.

g. When anchoring with liquid mulch binders, use rates recommended by the manufacturer. Do not use liquid mulch binders within 100 feet of wetlands or waterbodies.

h. Install erosion control fabric on waterbody banks at the time of final bank recontouring. Anchor the erosion control fabric with staples or other appropriate devices.

V. RESTORATION

A. CLEANUP

1. Commence cleanup operations immediately following backfill operations. Complete final grading, topsoil replacement, and installation of permanent erosion control structures within 20 days after backfilling the trench (10 days in residential areas). If seasonal or other weather conditions prevent compliance with these time frames, maintain temporary erosion controls (temporary slope breakers and sediment barriers) until conditions allow completion of cleanup.

   The project sponsor should file with the Secretary for the review and written approval of the Director, a winterization plan if construction will continue into the winter season when conditions could delay successful decompaction, topsoil replacement, or seeding until the following spring.

2. A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed (as specified in section IV.F.) and inspected and maintained (as specified in sections II.B.12 through 14). When access is no longer required, the travel lane must be removed and the right-of-way restored.

3. Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock that is not returned to the trench should be considered construction debris, unless approved for use as mulch or for some other use on the construction work areas by the landowner or land managing agency.

4. Remove excess rock from at least the top 12 inches of soil in all actively cultivated or rotated cropland and pastures, hayfields, and residential areas, as well as other areas at the landowner's request. The size, density, and distribution of rock on the construction work area should be similar to adjacent areas not disturbed by construction. The landowner may approve other provisions in writing.

5. Grade the construction right-of-way to restore pre-construction contours and leave the soil in the proper condition for planting.

6. Remove construction debris from all construction work areas unless the landowner or land managing agency approves otherwise.

7. Remove temporary sediment barriers when replaced by permanent erosion control measures or when revegetation is successful.

B. PERMANENT EROSION CONTROL DEVICES

1. Trench Breakers

a. Trench breakers are intended to slow the flow of subsurface water along the trench. Trench breakers may be constructed of materials such as sand bags or polyurethane foam. Do not use topsoil in trench breakers.

b. An engineer or similarly qualified professional shall determine the need for and spacing of trench breakers. Otherwise, trench breakers shall be installed at the same spacing as and upslope of permanent slope breakers.

c. In agricultural fields and residential areas where slope breakers are not typically required, install trench breakers at the same spacing as if permanent slope breakers were required.

d. At a minimum, install a trench breaker at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody or wetland and where needed to avoid draining a waterbody or wetland.

2. Permanent Slope Breakers

a. Permanent slope breakers are intended to reduce runoff velocity, divert water off the construction right-of-way, and prevent sediment deposition into sensitive resources. Permanent slope breakers may be constructed of materials such as soil, sand bags, or some functional equivalent.

b. Construct and maintain permanent slope breakers in all areas, except cultivated areas and lawns, using spacing recommendations obtained from the local soil conservation authority or land managing agency.

In the absence of written recommendations, use the following spacing unless closer spacing is necessary to avoid excessive erosion on the construction right-of-way:

Slope (%)	Spacing (feet)
5 - 15	300
>15 - 30	200
>30	100

c. Construct slope breakers to divert surface flow to a stable area without causing water to pool or erode behind the breaker. In the absence of a stable area, construct appropriate energy-dissipating devices at the end of the breaker.

d. Slope breakers may extend slightly (about 4 feet) beyond the edge of the construction right-of-way to effectively drain water off the disturbed area. Where slope breakers extend beyond the edge of the construction right-of-way, they are subject to compliance with all applicable survey requirements.

C. SOIL COMPACTION MITIGATION

1. Test topsoil and subsoil for compaction at regular intervals in agricultural and residential areas disturbed by construction activities. Conduct tests on the same soil type under similar moisture conditions in undisturbed areas to approximate preconstruction conditions. Use penetrometers or other appropriate devices to conduct tests.

2. Plow severely compacted agricultural areas with a paraplow or other deep tillage implement. In areas where topsoil has been segregated, plow the subsoil before replacing the segregated topsoil.

   Alternatively, make arrangements with the landowner to plant and plow under a "green manure" crop, such as alfalfa, to decrease soil bulk density and improve soil structure. If subsequent construction and cleanup activities result in further compaction, conduct additional tilling.

3. Perform appropriate soil compaction mitigation in severely compacted residential areas.

D. REVEGETATION

1. General

   a. The project sponsor is responsible for ensuring successful revegetation of soils disturbed by project-related activities, except as noted in section V.D.1.b.

   b. Restore all turf, ornamental shrubs, and specialized landscaping in accordance with the landowner's request, or compensate the landowner. Restoration work must be performed by personnel familiar with local horticultural and turf establishment practices.

2. Soil Additives

   Fertilize and add soil pH modifiers in accordance with written recommendations obtained from the local soil conservation authority, land management agencies, or landowner. Incorporate recommended soil pH modifier and fertilizer into the top 2 inches of soil as soon as possible after application.

3. Seeding Requirements

   a. Prepare a seedbed in disturbed areas to a depth of 3 to 4 inches using appropriate equipment to provide a firm seedbed. When hydroseeding, scarify the seedbed to facilitate lodging and germination of seed.

b. Seed disturbed areas in accordance with written recommendations for seed mixes, rates, and dates obtained from the local soil conservation authority or as requested by the landowner or land management agency. Seeding is not required in actively cultivated croplands unless requested by the landowner.

c. Perform seeding of permanent vegetation within the recommended seeding dates. If seeding cannot be done within those dates, use appropriate temporary erosion control measures discussed in section IV.F. and perform seeding of permanent vegetation at the beginning of the next recommended seeding season. Lawns may be seeded on a schedule established with the landowner.

d. In the absence of written recommendations from the local soil conservation authorities, seed all disturbed soils within 6 working days of final grading, weather and soil conditions permitting, subject to the specifications in section V.D.3.a-c.

e. Base seeding rates on Pure Live Seed. Use seed within 12 months of seed testing.

f. Treat legume seed with an inoculant specific to the species using the manufacturer's recommended rate of inoculant appropriate for the seeding method (broadcast, drill, or hydro).

g. In the absence of written recommendations from the local soil conservation authorities, landowner, or land managing agency to the contrary, a seed drill equipped with a cultipacker is preferred for seed application.

Broadcast or hydroseeding can be used in lieu of drilling at double the recommended seeding rates. Where seed is broadcast, firm the seedbed with a cultipacker or imprinter after seeding. In rocky soils or where site conditions may limit the effectiveness of this equipment, other alternatives may be appropriate (e.g., use of a chain drag) to lightly cover seed after application, as approved by the Environmental Inspector.

VI. OFF-ROAD VEHICLE CONTROL

To each owner or manager of forested lands offer to install and maintain measures to control unauthorized vehicle access to the right-of-way. These measures may include:

A. Signs;

B. Fences with locking gates;

C. Slash and timber barriers, pipe barriers, or a line of boulders across the right-of-way; and

D. Conifers or other appropriate trees or shrubs across the right-of-way.

VII. POST-CONSTRUCTION ACTIVITIES

A. MONITORING AND MAINTENANCE

1. Conduct follow-up inspections of all disturbed areas after the first and second growing seasons to determine the success of revegetation.

2. Revegetation in non-agricultural areas shall be considered successful if upon visual survey the density and cover of non-nuisance vegetation are similar in density and cover to adjacent undisturbed lands. In agricultural areas, revegetation shall be considered successful if crop yields are similar to adjacent undisturbed portions of the same field.

   Continue revegetation efforts until revegetation is successful.

3. Monitor and correct problems with drainage and irrigation systems resulting from pipeline construction in active agricultural areas until restoration is successful.

4. Restoration shall be considered successful if the right-of-way surface condition is similar to adjacent undisturbed lands, construction debris is removed (unless requested otherwise by the land owner or land managing agency), revegetation is successful, and proper drainage has been restored.

5. Routine vegetation maintenance clearing shall not be done more frequently than every 3 years. However, to facilitate periodic corrosion and leak surveys, a corridor not exceeding 10 feet in width centered on the pipeline may be maintained annually in a herbaceous state. In no case shall routine vegetation maintenance clearing occur between April 15 and August 1 of any year.

6. Efforts to control unauthorized off-road vehicle use, in cooperation with the landowner, shall continue throughout the life of the project. Maintain signs, gates, and vehicle trails as necessary.

B. REPORTING

1. The project sponsor shall maintain records that identify by milepost:

   a. method of application, application rate, and type of fertilizer, pH modifying agent, seed, and mulch used;

   b. acreage treated;

   c. dates of backfilling and seeding;

   d. names of landowners requesting special seeding treatment and a description of the follow-up actions; and

   e. any problem areas and how they were addressed.

2. The project sponsor shall file with the Secretary quarterly activity reports documenting problems, including those identified by the landowner, and corrective actions taken for at least 2 years following construction.

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EXHIBIT G

Federal Energy Regulatory Commission's
Wetland and Waterbody Construction
And Mitigation Procedures

WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES

01/17/2003 VERSION

WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES

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WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES (PROCEDURES)

I. APPLICABILITY

A. The intent of these Procedures is to assist applicants by identifying baseline mitigation measures for minimizing the extent and duration of project-related disturbance on wetlands and waterbodies. The project sponsors should specify in their applications for a FERC Certificate (Certificate) any individual measures in these Procedures they consider unnecessary, technically infeasible, or unsuitable due to local conditions and to fully describe any alternative measures they would use. Applicants should also explain how those alternative measures would achieve a comparable level of mitigation.

Once a project is certificated, further changes can be approved. Any such changes from the measures in these Procedures (or the applicant's approved procedures) will be approved by the Director of the Office of Energy Projects (Director), upon the applicant's written request, if the Director agrees that an alternative measure:

1. provides equal or better environmental protection;

2. is necessary because a portion of these Procedures is infeasible or unworkable based on project-specific conditions; or

3. is specifically required in writing by another Federal, state, or Native American land management agency for the portion of the project on its land or under its jurisdiction.

Any requirements in these Procedures to file material with the Secretary of the FERC (Secretary) do not apply to projects undertaken under the provisions of the blanket certificate program. This exemption does not apply to a request for alternative measures.

Project-related impacts on non-wetland areas are addressed in the staff's Upland Erosion Control, Revegetation, and Maintenance Plan (Plan).

B. DEFINITIONS

1. "Waterbody" includes any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes:

   a. "minor waterbody" includes all waterbodies less than or equal to 10 feet wide at the water's edge at the time of crossing;

   b. "intermediate waterbody" includes all waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water's edge at the time of crossing; and

   c. "major waterbody" includes all waterbodies greater than 100 feet wide at the water's edge at the time of crossing.

2. "Wetland" includes any area that is not in actively cultivated or rotated cropland and that satisfies the requirements of the current Federal methodology for identifying and delineating wetlands.

II. PRECONSTRUCTION FILING

A. The following information shall be filed with the Secretary prior to the beginning of construction:

1. the hydrostatic testing information specified in section VII.B.3. and a wetland delineation report as described in section VI.A.1., if applicable; and

2. a schedule identifying when trenching or blasting would occur within each waterbody greater than 10 feet wide, or within any designated coldwater fishery. The project sponsor shall revise the schedule as necessary to provide FERC staff at least 14 days advance notice. Changes within this last 14-day period must provide for at least 48 hours advance notice.

B. The following site-specific construction plans required by these Procedures must be filed with the Secretary for the review and written approval by the Director:

1. plans for extra work areas that would be closer than 50 feet from a waterbody or wetland;

2. plans for major waterbody crossings;

3. plans for the use of a construction right-of-way greater than 75 feet wide in wetlands; and

4. plans for horizontal directional drill (HDD) "crossings" of wetlands or waterbodies.

III. ENVIRONMENTAL INSPECTORS

A. At least one Environmental Inspector having knowledge of the wetland and waterbody conditions in the project area is required for each construction spread. The number and experience of Environmental Inspectors assigned to each construction spread should be appropriate for the length of the construction spread and the number/significance of resources affected.

B. The Environmental Inspector's responsibilities are outlined in the Upland Erosion Control, Revegetation, and Maintenance Plan (Plan).

IV. PRECONSTRUCTION PLANNING

A. A copy of the Stormwater Pollution Prevention Plan (SWPPP) prepared for compliance with the U.S. Environmental Protection Agency's (EPA) National Stormwater Program General Permit requirements must be available in the field on each construction spread. The SWPPP shall contain Spill Prevention and Response Procedures that meet the requirements of state and Federal agencies.

1. It shall be the responsibility of the project sponsor and its contractors to structure their operations in a manner that reduces the risk of spills or the accidental exposure of fuels or hazardous materials to waterbodies or wetlands. The project sponsor and its contractors must, at a minimum, ensure that:

a. all employees handling fuels and other hazardous materials are properly trained;

b. all equipment is in good operating order and inspected on a regular basis;

c. fuel trucks transporting fuel to on-site equipment travel only on approved access roads;

d. all equipment is parked overnight and/or fueled at least 100 feet from a waterbody or in an upland area at least 100 feet from a wetland boundary. These activities can occur closer only if the Environmental Inspector finds, in advance, no reasonable alternative and the project sponsor and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill;

e. hazardous materials, including chemicals, fuels, and lubricating oils, are not stored within 100 feet of a wetland, waterbody, or designated municipal watershed area, unless the location is designated for such use by an appropriate governmental authority. This applies to storage of these materials and does not apply to normal operation or use of equipment in these areas; and

f. concrete coating activities are not performed within 100 feet of a wetland or waterbody boundary, unless the location is an existing industrial site designated for such use.

2. The project sponsor and its contractors must structure their operations in a manner that provides for the prompt and effective cleanup of spills of fuel and other hazardous materials. At a minimum, the project sponsor and its contractors must:

a. ensure that each construction crew (including cleanup crews) has on hand sufficient supplies of absorbent and barrier materials to allow the rapid containment and recovery of spilled materials and knows the procedure for reporting spills;

b. ensure that each construction crew has on hand sufficient tools and material to stop leaks;

c. know the contact names and telephone numbers for all local, state, and Federal agencies (including, if necessary, the U. S. Coast Guard and the National Response Center) that must be notified of a spill; and

d. follow the requirements of those agencies in cleaning up the spill, in excavating and disposing of soils or other materials contaminated by a spill, and in collecting and disposing of waste generated during spill cleanup.

B. AGENCY COORDINATION

The project sponsor must coordinate with the appropriate local, state, and Federal agencies as outlined in these Procedures and in the Certificate.

V. WATERBODY CROSSINGS

A. NOTIFICATION PROCEDURES AND PERMITS

1. Apply to the U.S. Army Corps of Engineers (COE), or its delegated agency, for the appropriate wetland and waterbody crossing permits.

2. Provide written notification to authorities responsible for potable surface water supply intakes located within 3 miles downstream of the crossing at least 1 week before beginning work in the waterbody, or as otherwise specified by that authority.

3. Apply for state-issued waterbody crossing permits and obtain individual or generic section 401 water quality certification or waiver.

4. Notify appropriate state authorities at least 48 hours before beginning trenching or blasting within the waterbody, or as specified in state permits.

B. INSTALLATION

1. Time Window for Construction

Unless expressly permitted or further restricted by the appropriate state agency in writing on a site-specific basis, instream work, except that required to install or remove equipment bridges, must occur during the following time windows:

a. coldwater fisheries - June 1 through September 30; and

b. coolwater and warmwater fisheries - June 1 through November 30.

2. Extra Work Areas

a. Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land.

b. The project sponsor shall file with the Secretary for review and written approval by the Director, a site-specific construction plan for each extra work area with a less than 50-foot setback from the water's edge, (except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land) and a site-specific explanation of the conditions that will not permit a 50-foot setback.

c. Limit clearing of vegetation between extra work areas and the edge of the waterbody to the certificated construction right-of-way.

d. Limit the size of extra work areas to the minimum needed to construct the waterbody crossing.

3. General Crossing Procedures

a. Comply with the COE, or its delegated agency, permit terms and conditions.

b. Construct crossings as close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit.

c. If the pipeline parallels a waterbody, attempt to maintain at least 15 feet of undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way.

d. Where waterbodies meander or have multiple channels, route the pipeline to minimize the number of waterbody crossings.

e. Maintain adequate flow rates to protect aquatic life, and prevent the interruption of existing downstream uses.

f. Waterbody buffers (extra work area setbacks, refueling restrictions, etc.) must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete.

4. Spoil Pile Placement and Control

a. All spoil from minor and intermediate waterbody crossings, and upland spoil from major waterbody crossings, must be placed in the construction right-of-way at least 10 feet from the water's edge or in additional extra work areas as described in section V.B.2.

b. Use sediment barriers to prevent the flow of spoil or heavily silt-laden water into any waterbody.

5. Equipment Bridges

a. Only clearing equipment and equipment necessary for installation of equipment bridges may cross waterbodies prior to bridge installation. Limit the number of such crossings of each waterbody to one per piece of clearing equipment.

b. Construct equipment bridges to maintain unrestricted flow and to prevent soil from entering the waterbody. Examples of such bridges include:

(1) equipment pads and culvert(s);
(2) equipment pads or railroad car bridges without culverts;
(3) clean rock fill and culvert(s); and
(4) flexi-float or portable bridges.

Additional options for equipment bridges may be utilized that achieve the performance objectives noted above. Do not use soil to construct or stabilize equipment bridges.

c. Design and maintain each equipment bridge to withstand and pass the highest flow expected to occur while the bridge is in place. Align culverts to prevent bank erosion or streambed scour. If necessary, install energy dissipating devices downstream of the culverts.

d. Design and maintain equipment bridges to prevent soil from entering the waterbody.

e. Remove equipment bridges as soon as possible after permanent seeding unless the COE, or its delegated agency, authorizes it as a permanent bridge.

f. If there will be more than 1 month between final cleanup and the beginning of permanent seeding and reasonable alternative access to the right-of-way is available, remove equipment bridges as soon as possible after final cleanup.

6. Dry-Ditch Crossing Methods

a. Unless approved otherwise by the appropriate state agency, install the pipeline using one of the dry-ditch methods outlined below for crossings of waterbodies up to 30 feet wide (at the water's edge at the time of construction) that are state-designated as either coldwater or significant coolwater or warmwater fisheries.

b. Dam and Pump

(1) The dam-and-pump method may be used without prior approval for crossings of waterbodies where pumps can adequately transfer streamflow volumes around the work area, and there are no concerns about sensitive species passage.

(2) Implementation of the dam-and-pump crossing method must meet the following performance criteria:

(i) use sufficient pumps, including on-site backup pumps, to maintain downstream flows;
(ii) construct dams with materials that prevent sediment and other pollutants from entering the waterbody (e.g., sandbags or clean gravel with plastic liner);
(iii) screen pump intakes;
(iv) prevent streambed scour at pump discharge; and
(v) monitor the dam and pumps to ensure proper operation throughout the waterbody crossing.

c. Flume Crossing

The flume crossing method requires implementation of the following steps:

(1) install flume pipe after blasting (if necessary), but before any trenching;

(2) use sand bag or sand bag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow through the flume pipe (some modifications to the stream bottom may be required in to achieve an effective seal);

(3) properly align flume pipe(s) to prevent bank erosion and streambed scour;

(4) do not remove flume pipe during trenching, pipelaying, or backfilling activities, or initial streambed restoration efforts; and

(5) remove all flume pipes and dams that are not also part of the equipment bridge as soon as final cleanup of the stream bed and bank is complete.

d. Horizontal Directional Drill (HDD)

To the extent they were not provided as part of the pre-certification process, for each waterbody or wetland that would be crossed using the HDD method, provide a plan that includes:

(1) site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and all areas to be disturbed or cleared for construction;

(2) a description of how an inadvertent release of drilling mud would be contained and cleaned up; and

(3) a contingency plan for crossing the waterbody or wetland in the event the directional drill is unsuccessful and how the abandoned drill hole would be sealed, if necessary.

7. Crossings of Minor Waterbodies

Where a dry-ditch crossing is not required, minor waterbodies may be crossed using the open-cut crossing method, with the following restrictions:

a. except for blasting and other rock breaking measures, complete instream construction activities (including trenching, pipe installation, backfill, and restoration of the streambed contours) within 24 hours. Streambanks and unconsolidated streambeds may require additional restoration after this period;

b. limit use of equipment operating in the waterbody to that needed to construct the crossing; and

c. equipment bridges are not required at minor waterbodies that do not have a state-designated fishery classification (e.g., agricultural or intermittent drainage ditches). However, if an equipment bridge is used it must be constructed as described in section V.B.5.

8. Crossings of Intermediate Waterbodies

Where a dry-ditch crossing is not required, intermediate waterbodies may be crossed using the open-cut crossing method, with the following restrictions:

a. complete instream construction activities (not including blasting and other rock breaking measures) within 48 hours, unless site-specific conditions make completion within 48 hours infeasible;

b. limit use of equipment operating in the waterbody to that needed to construct the crossing; and

c. all other construction equipment must cross on an equipment bridge as specified in section V.B.5.

9. Crossings of Major Waterbodies

Before construction, the project sponsor shall file with the Secretary for the review and written approval by the Director a detailed, site-specific construction plan and scaled drawings identifying all areas to be disturbed by construction for each major waterbody crossing (the scaled drawings are not required for any offshore portions of pipeline projects). This plan should be developed in consultation with the appropriate state and Federal agencies and should include extra work areas, spoil storage areas, sediment control structures, etc., as well as mitigation for navigational issues.

The Environmental Inspector may adjust the final placement of the erosion and sediment control structures in the field to maximize effectiveness.

10. Temporary Erosion and Sediment Control

Install sediment barriers (as defined in section IV.F.2.a. of the Plan) immediately after initial disturbance of the waterbody or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan; however, the following specific measures must be implemented at stream crossings:

a. install sediment barriers across the entire construction right-of-way at all waterbody crossings, where necessary to prevent the flow of sediments into the waterbody. In the travel lane, these may consist of removable sediment barriers or driveable berms. Removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;

b. where waterbodies are adjacent to the construction right-of-way, install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way; and

c. use trench plugs at all waterbody crossings, as necessary, to prevent diversion of water into upland portions of the pipeline trench and to keep any accumulated trench water out of the waterbody.

11. Trench Dewatering

Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in heavily silt-laden water flowing into any waterbody. Remove the dewatering structures as soon as possible after the completion of dewatering activities.

C. RESTORATION

1. Use clean gravel or native cobbles for the upper 1 foot of trench backfill in all waterbodies that contain coldwater fisheries.

2. For open-cut crossings, stabilize waterbody banks and install temporary sediment barriers within 24 hours of completing instream construction activities. For dry-ditch crossings, complete streambed and bank stabilization before returning flow to the waterbody channel.

3. Return all waterbody banks to preconstruction contours or to a stable angle of repose as approved by the Environmental Inspector.

4. Application of riprap for bank stabilization must comply with COE, or its delegated agency, permit terms and conditions.

5. Unless otherwise specified by state permit, limit the use of riprap to areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric.

6. Revegetate disturbed riparian areas with conservation grasses and legumes or native plant species, preferably woody species.

7. Install a permanent slope breaker across the construction right-of-way at the base of slopes greater than 5 percent that are less than 50 feet from the waterbody, or as needed to prevent sediment transport into the waterbody. In addition, install sediment barriers as outlined in the Plan. In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the waterbody.

8. Sections V.C.3. through V.C.6. above also apply to those perennial or intermittent streams not flowing at the time of construction.

D. POST-CONSTRUCTION MAINTENANCE

1. Limit vegetation maintenance adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody's mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in a herbaceous state. In addition, trees that are located within 15 feet of the pipeline that are greater than 15 feet in height may be cut and removed from the permanent right-of-way.

2. Do not use herbicides or pesticides in or within 100 feet of a waterbody except as allowed by the appropriate land management or state agency.

VI. WETLAND CROSSINGS

A. GENERAL

1. The project sponsor shall conduct a wetland delineation using the current Federal methodology and file a wetland delineation report with the Secretary before construction. This report shall identify:

   a. by milepost all wetlands that would be affected;

   b. the National Wetlands Inventory (NWI) classification for each wetland;

   c. the crossing length of each wetland in feet; and

   d. the area of permanent and temporary disturbance that would occur in each wetland by NWI classification type.

   The requirements outlined in this section do not apply to wetlands in actively cultivated or rotated cropland. Standard upland protective measures, including workspace and topsoiling requirements, apply to these agricultural wetlands.

2. Route the pipeline to avoid wetland areas to the maximum extent possible. If a wetland cannot be avoided or crossed by following an existing right-of-way, route the new pipeline in a manner that minimizes disturbance to wetlands. Where looping an existing pipeline, overlap the existing pipeline right-of-way with the new construction right-of-way. In addition, locate the loop line no more than 25 feet away from the existing pipeline unless site-specific constraints would adversely affect the stability of the existing pipeline.

3. Limit the width of the construction right-of-way to 75 feet or less. Prior written approval of the Director is required where topographic conditions or soil limitations require that the construction right-of-way width within the boundaries of a federally delineated wetland be expanded beyond 75 feet. Early in the planning process the project sponsor is encouraged to identify site-specific areas where existing soils lack adequate unconfined compressive strength that would result in excessively wide ditches and/or difficult to contain spoil piles.

4. Wetland boundaries and buffers must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete.

5. Implement the measures of sections V. and VI. in the event a waterbody crossing is located within or adjacent to a wetland crossing. If all measures of sections V. and VI. cannot be met, the project sponsor must file with the Secretary a site-specific crossing plan for review and written approval by the Director before construction. This crossing plan shall address at a minimum:

   a. spoil control;

   b. equipment bridges;

   c. restoration of waterbody banks and wetland hydrology;

   d. timing of the waterbody crossing;

e. method of crossing; and

f. size and location of all extra work areas.

6. Do not locate aboveground facilities in any wetland, except where the location of such facilities outside of wetlands would prohibit compliance with U.S. Department of Transportation regulations.

B. INSTALLATION

1. Extra Work Areas and Access Roads

a. Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from wetland boundaries, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land.

b. The project sponsor shall file with the Secretary for review and written approval by the Director, a site-specific construction plan for each extra work area with a less than 50-foot setback from wetland boundaries (except where adjacent upland consists of actively cultivated or rotated cropland or other disturbed land) and a site-specific explanation of the conditions that will not permit a 50-foot setback.

c. Limit clearing of vegetation between extra work areas and the edge of the wetland to the certificated construction right-of-way.

d. The construction right-of-way may be used for access when the wetland soil is firm enough to avoid rutting or the construction right-of-way has been appropriately stabilized to avoid rutting (e.g., with timber riprap, prefabricated equipment mats, or terra mats).

In wetlands that cannot be appropriately stabilized, all construction equipment other than that needed to install the wetland crossing shall use access roads located in upland areas. Where access roads in upland areas do not provide reasonable access, limit all other construction equipment to one pass through the wetland using the construction right-of-way.

e. The only access roads, other than the construction right-of-way, that can be used in wetlands without Director approval, are those existing roads that can be used with no modification and no impact on the wetland.

2. Crossing Procedures

a. Comply with COE, or its delegated agency, permit terms and conditions

b. Assemble the pipeline in an upland area unless the wetland is dry enough to adequately support skids and pipe.

c. Use "push-pull" or "float" techniques to place the pipe in the trench where water and other site conditions allow.

d. Minimize the length of time that topsoil is segregated and the trench is open.

e. Limit construction equipment operating in wetland areas to that needed to clear the construction right-of-way, dig the trench, fabricate and install the pipeline, backfill the trench, and restore the construction right-of-way.

f. Cut vegetation just aboveground level, leaving existing root systems in place, and remove it from the wetland for disposal.

g. Limit pulling of tree stumps and grading activities to directly over the trenchline. Do not grade or remove stumps or root systems from the rest of the construction right-of-way in wetlands unless the Chief Inspector and Environmental Inspector determine that safety-related construction constraints require grading or the removal of tree stumps from under the working side of the construction right-of-way.

h. Segregate the top 1 foot of topsoil from the area disturbed by trenching, except in areas where standing water is present or soils are saturated or frozen. Immediately after backfilling is complete, restore the segregated topsoil to its original location.

i. Do not use rock, soil imported from outside the wetland, tree stumps, or brush riprap to support equipment on the construction right-of-way.

j. If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil and subsoil in wetlands, use low-ground-weight construction equipment, or operate normal equipment on timber riprap, prefabricated equipment mats, or terra mats.

k. Do not cut trees outside of the approved construction work area to obtain timber for riprap or equipment mats.

l. Attempt to use no more than two layers of timber riprap to support equipment on the construction right-of-way.

m. Remove all project-related material used to support equipment on the construction right-of-way upon completion of construction.

3. Temporary Sediment Control

Install sediment barriers (as defined in section IV.F.2.a. of the Plan) immediately after initial disturbance of the wetland or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench). Except as noted below in section VI.B.3.c., maintain sediment barriers until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan.

a. Install sediment barriers across the entire construction right-of-way at all wetland crossings where necessary to prevent sediment flow into the wetland. In the travel lane, these may consist of removable sediment barriers or driveable berms. Removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent

b. Where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the wetland, install sediment barriers along the edge of the construction right-of-way as necessary to prevent sediment flow into the wetland.

c. Install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way through wetlands. Remove these sediment barriers during right-of-way cleanup.

4. Trench Dewatering

Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in heavily silt-laden water flowing into any wetland. Remove the dewatering structures as soon as possible after the completion of dewatering activities.

C. RESTORATION

1. Where the pipeline trench may drain a wetland, construct trench breakers and/or seal the trench bottom as necessary to maintain the original wetland hydrology.

2. For each wetland crossed, install a trench breaker at the base of slopes near the boundary between the wetland and adjacent upland areas. Install a permanent slope breaker across the construction right-of-way at the base of a slopes greater than 5 percent where the base of the slope is less than 50 feet from the wetland, or as needed to prevent sediment transport into the wetland. In addition, install sediment barriers as outlined in the Plan. In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the wetland.

3. Do not use fertilizer, lime, or mulch unless required in writing by the appropriate land management or state agency.

4. Consult with the appropriate land management or state agency to develop a project-specific wetland restoration plan. The restoration plan should include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of undesirable exotic species (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts. Provide this plan to the FERC staff upon request.

5. Until a project-specific wetland restoration plan is developed and/or implemented, temporarily revegetate the construction right-of-way with annual ryegrass at a rate of 40 pounds/acre (unless standing water is present).

6. Ensure that all disturbed areas successfully revegetate with wetland herbaceous and/or woody plant species.

7. Remove temporary sediment barriers located at the boundary between wetland and adjacent upland areas after upland revegetation and stabilization of adjacent upland areas are judged to be successful as specified in section VII.A.5. of the Plan.

D. POST-CONSTRUCTION MAINTENANCE

1. Do not conduct vegetation maintenance over the full width of the permanent right-of-way in wetlands. However, to facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in a herbaceous state. In addition, trees within 15 feet of the pipeline that are greater than 15 feet in height may be selectively cut and removed from the permanent right-of-way.

2. Do not use herbicides or pesticides in or within 100 feet of a wetland, except as allowed by the appropriate land management agency or state agency.

3. Monitor and record the success of wetland revegetation annually for the first 3 years after construction or until wetland revegetation is successful. At the end of 3 years after construction, file a report with the Secretary identifying the status of the wetland revegetation efforts. Include the percent cover achieved and problem areas (weed invasion issues, poor revegetation, etc.). Continue to file a report annually until wetland revegetation is successful.

4. Wetland revegetation shall be considered successful if the cover of herbaceous and/or woody species is at least 80 percent of the type, density, and distribution of the vegetation in adjacent wetland areas that were not disturbed by construction. If revegetation is not successful at the end of 3 years, develop and implement (in consultation with a professional wetland ecologist) a remedial revegetation plan to actively revegetate the wetland. Continue revegetation efforts until wetland revegetation is successful.

VII. HYDROSTATIC TESTING

A. NOTIFICATION PROCEDURES AND PERMITS

1. Apply for state-issued water withdrawal permits, as required.

2. Apply for National Pollutant Discharge Elimination System (NPDES) or state-issued discharge permits, as required.

3. Notify appropriate state agencies of intent to use specific sources at least 48 hours before testing activities unless they waive this requirement in writing.

B. GENERAL

1. Perform non-destructive testing of all pipeline section welds or hydrotest the pipeline sections, before installation under waterbodies or wetlands.

2. If pumps used for hydrostatic testing are within 100 feet of any waterbody or wetland, address the operation and refueling of these pumps in the project's Spill Prevention and Response Procedures.

3. The project sponsor shall file with the Secretary before construction a list identifying the location of all waterbodies proposed for use as a hydrostatic test water source or discharge location.

C. INTAKE SOURCE AND RATE

1. Screen the intake hose to prevent entrainment of fish.

2. Do not use state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate Federal, state, and/or local permitting agencies grant written permission.

3. Maintain adequate flow rates to protect aquatic life, provide for all waterbody uses, and provide for downstream withdrawals of water by existing users.

4. Locate hydrostatic test manifolds outside wetlands and riparian areas to the maximum extent practicable.

D. DISCHARGE LOCATION, METHOD, AND RATE

1. Regulate discharge rate, use energy dissipation device(s), and install sediment barriers, as necessary, to prevent erosion, streambed scour, suspension of sediments, or excessive streamflow.

2. Do not discharge into state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate Federal, state, and local permitting agencies grant written permission.

Tennessee Gas Pipeline Company

Docket No. SEC 2008-____

Application of Tennessee Gas Pipeline Company
For a Certificate of Site and Facility
For the Concord Lateral Expansion Project

EXHIBIT G

Spill Prevention, Control,
And Countermeasure Plan

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

TABLE OF CONTENTS

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

1. PREVENTATIVE MEASURES

The spill prevention and control methods listed in this section are based on approved spill control plans that the Company has used successfully in the past. This plan is comprehensive in that it addresses actions used to *prevent* spills in addition to specifying actions that will be taken should any spills occur, including emergency notification procedures. The Project's on-site EI(s) is responsible for ensuring that Contractors implement and maintain spill control measures. The responsibilities of these inspectors are described in the Federal Energy Regulatory Commission's ("FERC's") Erosion and Sediment Control Plan.

1.1 TRAINING

The Contractor will instruct personnel on the operation and maintenance of equipment to prevent the accidental discharge or spill of fuel, oil, and lubricants. Personnel will also be made aware of the pollution control laws, rules, and regulations applicable to their work.

Spill prevention briefings with the construction crew will be scheduled and conducted by the Contractor to insure adequate understanding of spill prevention measures. These briefings will highlight:

- precautionary measures to prevent spills;
- sources of spills, such as equipment failure or malfunction;
- standard operating procedures in case of a spill;
- equipment, materials, and supplies available for clean-up of a spill; and
- a list of known spill events.

A spill is an un-permitted release of product, raw materials, or chemicals outside any secondary containment and into the environment. Spills can occur as a result of leaks, accidents, or third party incidents.

1.2 EQUIPMENT INSPECTION/MAINTENANCE

The Contractor will inspect and maintain equipment that must be fueled and/or lubricated according to a strict schedule. The Contractor will submit to the Company for approval written documentation of the methods used and work performed.

All containers, valves, pipelines, and hoses will be examined regularly to assess their general condition. The examination will identify any signs of deterioration that could cause a spill and signs of leaks, such as accumulated fluids. All leaks will be promptly corrected and/or repaired.

1.3 REFUELING

(1) The Contractor will insure that equipment is refueled and lubricated within the ROW, compressor station yard, meter station site, or fee property and at least 100 feet away from all waterbodies and wetlands with the following exceptions:

- The EI finds, in advance, that no reasonable alternative is available and the Contractor and Company have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill;
- Areas such as rugged terrain or steep slopes where movement of equipment to refueling stations would cause excessive disturbance to the ROW or workspace;
- Areas where removing equipment from a wetland for servicing would increase adverse impacts to the wetland;
- Sites where moving equipment to refueling stations from pre-fabricated equipment pads is impracticable or where there is a barrier from the waterbody/wetland (i.e., road or railroad);
- Locations where the waterbody or wetland is located adjacent to a road crossing, compressor station yard, or meter station site (from which the equipment can be serviced); and
- Refueling of immobile equipment including, but not limited to, bending and boring machines, air compressors, padding machines, and hydro-test fill pumps.

In these areas, auxiliary fuel tanks will be used to reduce the frequency of refueling operations and in no case will refueling take place within 100 feet of any known potable water wells.

(2) The Contractor will assure that all refueling is done pursuant to the following conditions:

- Impact minimization measures and equipment will be sufficient to prevent discharged fluids from leaving the ROW, compressor station yard, meter station site, or workspace or reaching wetlands or waterbodies, and be readily available for use. These will include some combination of the following:

  a. dikes, berms or retaining walls sufficiently impervious to contain spilled oil;

  b. sorbent and barrier materials in quantities determined by the Contractor to be sufficient to capture the largest reasonably

foreseeable spill;

c. drums or containers suitable for holding and transporting contaminated materials;
d. curbing;
e. culverts, gutters, or other drainage systems;
f. weirs, booms, or other barriers;
g. spill diversion or retention ponds; and
h. sumps and collection systems.

- All spills will be cleaned up immediately. Containment equipment will not be used for storing contaminated material.

(3) The Contractor will prepare for approval by the Company a list of the type, quantity, and the storage location of containment and clean up equipment to be used during construction.

1.4 STORAGE

Storage containment areas will not have drains, unless such drains lead to a containment area or vessel where the entire spill can be recovered.

1.5 PERSONNEL SUPPORT

Prior to construction, the ROW inspector or agent shall identify and prepare a written inventory of water wells within 150 feet of the construction site. The Construction ROW Agent will notify the authorities of all potable water supply intakes located within three miles downstream of any crossings a minimum of one week prior to construction.

2. IMPACT MINIMIZATION MEASURES

Containment is the immediate priority in the case of a spill. A spill will be contained on the Company's property, ROW, compressor station yard, meter station site, or workspace, if possible. Clean up procedures will begin immediately after a spill is contained. In no case will containment equipment be used to store contaminated material.

Immediately report any spill or release of the following materials *regardless of location* (on-property or off-property) to the EI for notification to the appropriate Company representative as indicated below:

- Oil or petroleum products;
- Hazardous substances or hazardous wastes;
- Chemicals;

- Unplanned natural gas (flaring or venting); and,
- Asbestos-containing materials.

The following contacts are currently assigned to the Project and are subject to change (call in the order listed until someone is reached):

El Paso Corporation Field or Area Office (Location)

General Office Number:	Number
Compliance Supervisor:	Kelley Beavers (205) 325-3784
Field Env. Coordinator:	Name & Number
Div. General Manager:	Name & Number

El Paso Corporation Houston Office (Houston, Texas)

General Dept. Number:	(713) 420-7340
Environmental Coordinator:	Name & Number
Department Manager:	Jon Barfield (713) 420-7902
Department Director:	Tom Hutchins (713) 420-7918

If a spill enters a body of water, the Contractor will immediately take samples upstream and downstream from point of entry and refrigerate samples. If advised, additional analysis will be completed and/or additional samples will be gathered.

If the EI agrees and the Contractor determines that a spill is small enough such that the construction crew can safely handle it, the crew will use construction equipment to containerize all spilled material, contaminated soil, and sorbent material in a manner consistent with the spilled materials' characterization.

If the EI agrees and the Contractor determines that a spill can not be adequately excavated and disposed of by the construction crew alone, the Contractor will contact waste containment specialists. The Contractor will ensure that all excavated wastes are transported to a Company approved disposal facility licensed to accept such wastes. Wastes will not be transported to a company facility (i.e., Compressor Station, Meter Station Facility, etc.) unless the Field Environmental Coordinator approves it in writing.

The Contractor will prepare a Construction Site Spill Report form to be given to the Company that includes:

a. the date, time and location of the occurrence or discovery of the occurrence;

b. a description or identity of the material spilled;

c. an estimate of the quantity spilled;

d. the circumstances that caused the spill (e.g., equipment failure);

e. a list of waterbodies affected or potentially affected by the spill;

f. a statement verifying whether a sheen is present;

g. the size of the affected area;

h. an estimate of the depth that the material has reached in water or on soil;

i. a determination of whether the spill will migrate off of the Company's property or the ROW or workspace;

j. a determination of whether the spill is under control;

k. a statement verifying that clean-up has begun and a description of the methods being used to clean up the spill;

l. the names of the people observing the spill (with their affiliations) and the extent of injuries, if any;

m. the Field "Report of Spill" form.

The Company shall ensure that the Contractor's spill report is complete and shall forward it to the Field Environmental Coordinator. The Contractor shall follow the *"Contractor's Environmental Guidelines - Waste Disposal and Spill Notification"* procedures regarding all required regulatory notifications, subject to Company's prior approval, and for obtaining any necessary state and local licenses, permits, or other authorizations associated with the project, except as otherwise provided in the scope of work. Contractor is responsible for knowing what state and local environmental authorizations are necessary for the specific job at hand. Any above-mentioned permits, clearances or authorizations obtained by Contractor shall be furnished to Company.

The following releases require immediate (within 1 hour of discovery) notification to the National Response Center ("NRC"):

(1) Any petroleum product released into streams, rivers, lakes, or dry washes;

(2) A release that exceeds the reportable quantity ("RQ") of any CERCLA hazardous substances in any 24-hour period which is not fully contained;

(3) A release of a hazardous substance or hazardous waste which occurs during transportation; and,

(4) A release of hazardous waste which contains a RQ of a hazardous substance.

- The National Response Center (1-800-424-8802) will be notified immediately if spills occur above threshold levels (Clean Water Act, 40 CFR 110.10) into surface waters and/or wetlands.

3. SUGGESTED EQUIPMENT LIST

Section 1.3 of this plan states that the Contractor will prepare a list of the type, quantity, and location of storage or containment and clean up equipment to be used on the construction site. The list will include the procedures and impact minimization measures to be used in response to a spill. The Contractor's choice of impact minimization measures and equipment will be tailored to meet the characteristics of the affected terrain as well as the types and amounts of material that could potentially be spilled. The types of equipment that the Company expects to use to control spills at terrestrial sites and wetlands are described in the FERC's Erosion and Sediment Control Plan.

3.1 TERRESTRIAL CONSTRUCTION

General equipment that the Contractor will use for spill containment and cleanup on terrestrial areas includes:

- sorbents (pillows, socks, and wipe sheets) for containment and pick up of spilled liquids;
- commercially available spill kits (or the functional equivalent thereof) that are prepackaged, self-contained spill kits containing a variety of sorbents for small to large spills;
- structures such as gutters, culverts, and dikes for immediate spill containment;
- shovels, backhoes, etc., for excavating contaminated materials;
- sumps and collection systems; and
- drums, barrels, and temporary storage bags to clean up and transport contaminated materials.

3.1.1 Fuels and Lubricating Oil Storage

The Contractor will implement special measures to prevent spills in areas where trucks carrying fuel and where oil barrels are loaded. Containment equipment will be kept close to tanks and barrels to minimize spill response time, and will include absorbent pads or mats. The quantity and capabilities of the mats will be sufficient to capture the largest foreseeable spill, given ROW or workspace characteristics and crankcase and other fuel vessel capacities.

3.1.2 Routine Refueling and Maintenance

Absorbent pads and mats will be placed on the ground beneath equipment before refueling and maintenance. Equipment that will be stored on site for routine refueling and maintenance includes small sorbent kits (or their functional equivalent).

3.1.3 Equipment Failure

Kits with the capacity of absorbing up to five gallons of liquid can fit beneath the operator's seat on construction equipment for use in an equipment failure.

3.2 WATERBODY AND WETLAND CROSSINGS

For each wetland and waterbody crossed, the equipment listed below will be available in addition to that needed for terrestrial construction. This equipment will be stored close to the water or wetland to minimize response time, and will include:

- oil containment booms and the related equipment needed for rapid deployment, and
- equipment to remove oils from water, such as oleophilic and hydrophobic absorbent booms and mats, and/or mechanical skimmers.

Tennessee Gas Pipeline Company

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EXHIBIT G

Unanticipated Discovery Plan
For Cultural Resources

Procedures Guiding the Discovery of Unanticipated Cultural Resources and Human Remains

Tennessee Gas Pipeline
an El Paso company

Concord Expansion Project,
Pelham, New Hampshire.

October 2007

Submitted by:
The Public Archaeology Laboratory, Inc.
210 Lonsdale Ave
Pawtucket, RI 02860

Introduction

Tennessee Gas Pipeline Company (Tennessee), a subsidiary of El Paso Corporation, is committed to the protection and preservation of cultural resources, in accordance with federal and state legislation, and is continuing that commitment as part of the proposed Concord Expansion project. Tennessee recognizes that despite intensive cultural resource field investigations that are typically performed prior to project construction, or a determination that a particular area exhibits low archaeological sensitivity, it is nonetheless possible that cultural resource deposits could be discovered during project construction or maintenance activities, particularly during excavation. Tennessee also re ognizes the requirement for compliance with federal and state regulations and guidelines regarding the treatment of human remains, if any are discovered.

As such, the procedures guiding the unanticipated discovery of cultural resources and human remains detailed herein were developed on behalf of Tennessee and in consultation with the New Hampshire Division of Historical Resources/State Historic Preservation Office (NH DHR/SHPO). They represent the basis of the approach that Tennessee will use to address emergency discoveries of archaeological cultural resources during construction activities within the Concord Expansion project area of potential effect.

The purpose of archaeological surveys during the planning of pipeline projects is to determine the presence and disposition of historic and prehistoric cultural resources within the project area. These archaeological investigations are conducted in accordance with standards set forth in the Federal Energy Regulatory Commission (FERC) Office of Pipeline Regulation's *Guidelines for Reporting on Cultural Resources Investigations* (2002), pursuant to 18 CFR 157.206 and Appendix II of Subpart F, which require actions taken under sections 3 and 7 of the Natural Gas Act (Part 380, Appendix A) to comply with the National Environmental Policy Act of 1969 (NEPA) and Section 106 of the National Historic Preservation Act of 1966 (16 USC 470f), as amended (1976, 1980, 1992, 1999) implementing the regulations of the Advisory Council on Historic Preservation (36 CFR 800). All work is undertaken pursuant to the *Secretary of the Interior Standards for Archaeology and Historic Preservation* (48 Federal Regulations 44716-42

[1983]) and the applicable laws and regulations pertaining to the identification, preservation, and protection of cultural resources of New Hampshire.

Notification Procedures

During Construction

Tennessee is committed to the protection and preservation of cultural resources, in accordance with federal and state legislation. Tennessee recognizes that – despite the intensive cultural resource field investigations that are typically performed prior to project construction – it is nonetheless possible that previously unknown cultural resource sites could be discovered during the project construction process, particularly during excavation activities. Tennessee recognizes the requirement for strict compliance with federal and state regulations and guidelines regarding the treatment of human remains, if any are discovered. The following details the plan that will be followed in the event that new cultural resource sites or human remains are discovered during the construction process.

Artifact Discoveries

The following procedures will be adhered to in the event of a potential discovery of artifacts during construction.

1. Possible artifacts may be discovered by Tennessee or contractor construction personnel. In the event that suspected artifacts are uncovered during a construction activity, that activity shall immediately be halted until it can be determined whether that materials are cultural and, if so, whether they represent a potentially significant site.

   If artifacts are identified by contractor construction personnel, activities that could affect the integrity of the cultural materials will be suspended immediately and the contractor's construction foreman will be notified immediately. The foreman, in turn, will notify Tennessee chief inspector. Notification will include the specific construction area (e.g., trench wall, spoil pile, foundation excavation) in which the potential site is located.

   If artifacts are identified by Tennessee personnel, they will direct the contractor to stop work on activities that could affect the integrity of the resource, and will inform Tennessee's Environmental Affairs Department.

2. Upon notification or discovery of a possible site, Tennessee will contact its cultural resource consultants who will in turn be responsible for determining whether the possible artifacts are within a site recorded during a previous archaeological survey, if any. This will be accomplished by reviewing the project maps or other project data on which recorded sites may be plotted.

   If the artifacts are from a site that was previously recorded and addressed in the pre-construction archaeological investigations, no further work will be required. The location of the artifacts will be identified on Tennessee maps, along with the date on which they were identified.

3. If the artifacts are discovered in an area in which no sites are recorded, the Tennessee chief inspector and the Tennessee Environmental Affairs Department will be notified and in turn notify Tennessee's cultural resource management consultants. An archaeologist then will be called to review the material. On-site Tennessee personnel will discuss with the archaeologist the location and type of artifacts. If the archaeologist is not in the immediate site vicinity and further work in the excavation area is not imminent, then photographs or drawings of the artifacts may be faxed to the archaeologist for review.

   Based on the information provided, the archaeologist will determine if a visit to the area is required and, if so, is expected to have crews on-site within 24 hours after notification.

   If on-site archaeological investigations are required, the Tennessee chief inspector will inform the construction contractor. No construction work at the site that could affect the artifacts will be performed until the archaeologists review the site. The site will be flagged as being off-limits for work, but will not be identified as an archaeological site *per se* in order to protect the resources.

4. The archaeologists will conduct a review of the site and will test the site as necessary. Since the area will have already been partially disturbed by construction activities, the objective of any cultural resource investigations will be to recover data quickly so that construction at the site can continue in a timely manner.

5. The archaeologists will determine, based on the artifacts found and on the cultural sensitivity of the area in general, whether the site is potentially significant and whether the FERC and State Historic Preservation Officer (SHPO) require immediate notification by telephone. If not, data regarding the site will be faxed or sent by express mail to the FERC and SHPO in order to ensure a quick site clearance.

6. Tennessee and its archaeologists will work with the FERC and SHPO to ensure that the site is cleared in as timely a fashion as possible.

Human Remains Discoveries

If any human remains are to be encountered, they will likely be discovered in excavations, possibly below areas tested by standard survey techniques.

The treatment of any human remains encountered during Tennessee projects will be guided by the policy statement adopted by the Advisory Council on Historic Preservation ([Advisory Council]; see *Consulting About Archaeology Under Section 106*, Advisory Council 1990), and by the relevant state laws and guidelines. The Advisory Council policy statement recommends that, to the extent allowed by law, treatment of human remains should adhere to the following principles:

- Human remains and grave goods should not be disinterred unless required in advance of some kind of disturbance, such as construction;

- Disinterment, when necessary, should be done carefully, respectfully, and completely, in accordance with proper archaeological methods;

- In general, human remains and grave goods should be reburied in consultation with the descendants of the dead;

- Prior to reburial, scientific studies should be performed as necessary to address justified research topics;

- Scientific studies and reburial should occur according to a definite, agreed-upon schedule; and

- Where scientific study is offensive to the descendants of the dead, and the need for such a study does not outweigh the need to respect the concerns of such descendants, reburial should occur without prior study. Conversely, where the scientific research value of human remains or grave goods outweighs any objections that descendants may have to their study, they should not be reburied but should be retained in perpetuity for study.

The procedures that will be followed in the event that human remains are discovered during construction of Tennessee projects are as follows:

1. If any personnel on the construction site identify human remains, all construction work in the immediate vicinity of the site that could affect the integrity of the remains will cease immediately. The remains should not be touched, moved, or further disturbed.

2. Tennessee project manager will be informed immediately and notified of the exact location of the remains, as well as of the time of discovery, and in turn will be responsible for immediately contacting Tennessee's archaeological consultant.

3. The archaeologist and Tennessee will be responsible for notifying appropriate FERC personnel as well as the SHPO, the Chief Medical Examiner and the State Police.

4. The FERC and the SHPO will consult with the property owner, and the appropriate Native American group if the remains are Native American, to discuss whether there are prudent and feasible alternatives to protect the remains. The results of this consultation will be made in writing. If it is not possible to protect the remains, they may be excavated only under a memorandum of agreement (MOA) with all interested parties including FERC, Tennessee, SHPO, recognized Native American groups, researchers, representatives, and landowners. This MOA will outline an adequate data recovery plan that specifies a qualified research team and an appropriate research design (including a proposal for disposition of the remains). Analyses to be performed on Native American remains will be discussed in consultation with the appropriate Native American representatives. After analyses, Native American remains will be returned to the appropriate Native American group for disposition.

5. In all cases, due care will be taken in the excavation and subsequent transport and storage of the remains to ensure that the sacred meaning of the remains for Native Americans are respected and protected, as required.

Applicable State Laws

New Hampshire General Laws, RSA 227-C:1-17; RSA 227-C:8a-g; RSA 289; RSA 290; RSA 635.

List of Contacts

Federal Energy Regulatory Commission
Office of Pipeline Regulation
825 N. Capitol Street, N.E.
Washington, DC 20426
Contact: Van T. Button, Archaeologist
Environmental Review and Compliance Branch II
Tel: (202) 502-8613
Fax: (202) 219-0205

New Hampshire State Historic Preservation Office
New Hampshire Division of Historical Resources
19 Pillsbury Street, 2nd Floor
Concord, New Hampshire 03301
Contact: Edna Feighner, Archaeologist and Review and Compliance Coordinator
Tel: (603) 271-2813
Fax: (603) 271-3433

New Hampshire Chief Medical Examiner
246 Pleasant Street, Suite 218
Concord, New Hampshire 03301
Contact: Dr. Thomas Andrew, Chief Medical Examiner
Tel: (603) 271-1235
Fax: (603) 271-6308

New Hampshire Intertribal Native American Council
17 Walnut Street
Laconia, New Hampshire 03246
Contact: Peter Newell, Council Chief
Tel: (603)524-1982

New Hampshire State Police
Headquarters
33 Hazen Drive
Concord, New Hampshire 03305
Contact: Tel: (603) 271-3636
Fax: (603) 271-1153

Tennessee Gas Pipeline Company

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EXHIBIT G

Waste Management Plan

WASTE MANAGEMENT PLAN

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WASTE MANAGEMENT PLAN

The following information is to be used as a contractor's guidance tool when generating wastes on a project and to assist the contractor in developing a waste management plan, which must be submitted to the company before the project begins.

1. Waste Identification and Characterization

1.1 Identifying Wastes

Wastes may be grouped into four categories, each requiring different forms of disposal: hazardous waste, non-hazardous waste, special waste, and universal waste.

- **Hazardous wastes** - Wastes that meet one of the criteria of ignitable, corrosive, reactive, toxic, or is specifically listed as hazardous waste by regulation. These wastes require special handling and disposal.

- **Non-hazardous wastes** - Wastes that do not fall into the other categories. This includes general trash.

- **Special wastes** - Wastes that do not meet the criteria for hazardous wastes, but may present special hazards or require special handling. Examples of special wastes are asbestos, polychlorinated biphenyls ("PCBs"), radioactive waste, and naturally occurring radioactive material ("NORM"). It's important to note that some states have their own classification of special wastes.

- **Universal wastes** - To reduce the amount of hazardous waste in municipal solid waste streams, the Environmental Protection Agency ("EPA") and many states recognize batteries, thermostats and lamps, e.g., fluorescent light bulbs, as "universal" and thus allow easier handling of these wastes.

1.2 Waste Characterization

The Environmental Inspector ("EI") shall coordinate with the Field Environmental Representative and/or Compressor Station personnel to determine if existing waste profiles exist for wastes generated during construction. These locations maintain waste profiles that list the characterization results of various wastes. If the classification of a waste is unknown, the waste must be characterized using test results or knowledge of the process generating the waste to determine the proper handling requirements for that waste. The EI shall coordinate with the Field Environmental Representative and Contractor to determine the type of waste and the party responsible for proper disposal. The information below is used to characterize a waste.

- Source of the waste.

- Material Safety Data Sheets ("MSDS") for materials comprising the waste.

- Laboratory results from waste testing, as applicable.

Contact the Field Environmental Representative for waste characterization and sampling instructions if no existing waste profile exists.

Prior to waste characterization a number of general guidelines shall also be adhered to when handling or storing wastes.

- Ensure that the Contractor's Environmental Guidelines in the contract are followed.
- Ensure that the Contractor provides a list to the EI of all hazardous materials or potential contaminants that are to be used or stored on the project site.
- DO NOT bury any waste with the exception of stumps, rocks, or boulders as approved within the FERC's Plan and Procedures.
- Never mix any waste awaiting characterization with other wastes.
- Never ship any waste unless it has been characterized.
- Never ship any hazardous waste from the job site to a compressor station without prior approval from the Field Environmental Representative and compressor station.
- Ship wastes along with the required manifests only to company-approved facilities.
- Never ship drums of waste to a compressor station without prior approval from the Field Environmental Representative and the compressor station.

2. Waste Types

2.1 Hazardous Waste

Common wastes include, but are not limited to: pipeline sludge, spent pigs, sandblast abrasive (depending on type and use), paint thinner, and solvents.

The following procedures apply to storage of waste determined to be hazardous for all classes of generators:

- Store hazardous wastes using the Department of Transportation ("DOT") approved containers, a frac tank (bulk liquid wastes), a covered steel roll-off container with a poly-liner (bulk solid wastes like contaminated soil), or on a

thick poly-liner and provide the area with a poly-liner cover and temporary containment berm (bulk solid wastes).

- When using DOT-approved containers, be sure the containers are kept closed or sealed (except when waste is being added), maintained in good condition (not damaged, leaking or corroded) and store compatible substances that will not react with the hazardous waste. For example, store acidic wastes in plastic or plastic-lined containers rather than steel containers.

- Label hazardous waste containers (drums, tanks, roll-off containers) with a hazardous waste label as soon as any hazardous waste is placed into the container. Use a waterproof pen to complete the following information on the label:

  - Generator name, address, and phone number.
  - Generator EPA identification number.
  - Description of waste (contact the Field Environmental Representative to obtain a waste description).
  - The 4-digit EPA waste code (the Field Environmental Representative will provide EPA waste codes).
  - Accumulation date (the date the waste was added to the container, if not from satellite storage, or the date it was brought to the waste storage area from a satellite accumulation area).

- Label waste piles with a weatherproof sign identifying the waste and the date the waste pile was started. Waste piles are to be placed on poly-liner, covered to protect them from weather, and surround with barricade tape.

- Store hazardous waste in a designated hazardous waste storage area (or in a designated satellite accumulation area) that is covered or protected from the weather; has an impermeable floor, surrounded by curbing or use spill pallets; and is more than 50 feet away from the facility property line if ignitable or reactive hazardous waste is stored in the area.

<u>Manage the hazardous waste storage areas as follows:</u>

- Identify as hazardous and non-hazardous waste appropriately.

- Arrange the containers by waste type, keeping similar hazardous wastes together.

- Separate any incompatible waste by a dike, berm, wall, or other containment device.

- Turn containers so labels may be read easily and ensure that enough isle space is left between drums to inspect for leaks and to gain access to respond to spills or fire.

- Handle waste containers carefully to prevent rupture or leaks, and protect containers from extreme temperatures.

- Large Quantity Generators and in some states Small Quantity Generators must have a contingency plan, make weekly inspections of hazardous wastes, and provide specific training to personnel.

- Hazardous waste can only be disposed at approved facilities. Contact the Field Environmental Representative for a list of approved facilities.

2.2 Non-Hazardous Waste

Common wastes include, but are not limited to: oily rock/soil, oily rags, sandblast abrasive (depending on type and use), and general trash/garbage.

- Turn containers so labels may be read easily.

- Non-hazardous waste is waste that has not been found to be hazardous through testing or by generator knowledge but has special transportation and disposal requirements, which may include State permitting and approvals.

- Store non-hazardous wastes using one of the following methods:

    - In DOT-approved containers.
    - In a frac tank (bulk liquid wastes).
    - In a covered steel roll off container with a poly-liner (e.g., bulk solid wastes like contaminated soil or used sandblasting abrasive).
    - On a thick poly-liner and provide the area with a poly-liner cover and temporary containment berm (bulk solid wastes).

- When using DOT-approved containers, be sure the containers are:

    - Kept closed or sealed (except when waste is being added).
    - In good condition (not damaged, leaking or corroded).

- Label non-hazardous waste containers (drums, tanks, roll-off containers) with a non-hazardous waste label identifying the contents as soon as waste is placed into the container.

- Store non-hazardous waste segregated from hazardous waste storage or satellite accumulation areas.

- Non-hazardous waste can only be disposed at approved facilities. Contact the Field Environmental Representative for a list of approved facilities.

Some States allow sandblast sand to be left in the ditch if sandblasting bare pipe only. Contact the Project Environmental Coordinator to verify if this type of activity may occur.

2.3 Special Waste (Asbestos & PCB)

Common wastes include, but are not limited to: asbestos or asbestos containing material ("ACM") and PCBs.

2.3.1 Asbestos/ACM

Check with the Project Environmental Coordinator to determine if there are any additional state-specific requirements that may apply.

- Store in double, six-mil thick plastic bags, or single bags in DOT approved drums.
- When placing asbestos into waste containers, do the following:
  - Make sure that the asbestos is thoroughly wet before closing the container for the final time.
  - Gloves and other solids can be added before sealing.
  - Seal all containers by securing the drum lids or by wrapping the neck of plastic bags with duct tape.
  - Store containers in an area where the waste is secure and not easily disturbed.
  - For accumulation containers, each item must be individually wrapped and placed in drum.
- Mark or label the container with the information indicated below:
  - The letters "RQ" for reportable quantity, if the waste contains one pound or more of friable asbestos.
  - The word "Waste".
  - The word "Asbestos" and the identification number for asbestos "NA2212".
  - The facility name and address.
  - A warning label stating "DANGER; CONTAINS ASBESTOS FIBERS; AVOID CREATING DUST; CANCER AND LUNG DISEASE HAZARD".
- Ship asbestos waste to a Company-approved disposal facility. Contact the Field Environmental Representative for a list of approved facilities.
- Pipe coated with non-friable asbestos can be sold and transported to a scrap dealer or individual buyer. Written notification to the dealer or buyer must include a disclosure and release document that indicates that the pipe is coated with an

asbestos-containing material. El Paso has a specific document for this purpose that contains the appropriate language. Contact the Field Environmental Representative for details on transferring pipe coated with non-friable asbestos.

- Do the following when preparing sections of pipe coated with friable asbestos-containing material for transportation to a Company-approved disposal facility:
  - o Pipe joints must be less than 40 feet long for transportation by trailer (also verify whether or not a specific pipe length is required by the disposal company).
  - o Pipe joints must be less than 20 feet long for transportation in a roll-off box.
  - o Wrap ends of pipe with polyvinyl and duct tape or place in sealed roll-off container.
  - o A manifest is required for transportation to a disposal facility.
  - o Provide State environmental or health department registration, if applicable.

- Use either Company vehicles or contract vehicles that meet DOT requirements to transport asbestos waste. If the amount of asbestos-containing material being transported is 1,000 pounds or more, a commercial drivers license with hazardous materials endorsement is required.

- Ensure that the vehicle transporting regulated asbestos-containing material (friable) from the facility is marked with signs warning of asbestos danger while the vehicle is being loaded or unloaded. The sign should read "DANGER; ASBESTOS DUST HAZARD; CANCER AND LUNG DISEASE HAZARD; AUTHORIZED PERSONNEL ONLY".

- Inspect all containers before and after unloading/loading to ensure:
  - o All drum tops are secured.
  - o Duct tape has been placed around the necks of all bags and there are no punctures. Place additional bags over the outside of any punctured bags and secure the necks of the new bags with duct tape.
  - o All containers are properly labeled.

- The type of shipping papers required depends on the State. A waste shipping record must be completed for each shipment. Check with the Project Environmental Coordinator to determine if there are any additional state-specific requirements that may apply.

- Make sure shipping papers are completed as follows:

- Check the "RQ" column on the shipping paper or mark "RQ" before the shipping name if the shipment contains one pound or more of friable asbestos.
- DOT shipping name is "Waste Asbestos" or, if the asbestos waste is mixed with a binder, filler, or other material, "Waste Asbestos Mixture".
- Hazard Class Identification Number is "Class 9".
- North American Identification Number is "NA2212".
- Packing group is "PG III".

- Never dispose of asbestos-containing wastes by placing it in a container with other trash, by burying, using as fill material, or leaving in a pipe excavation ditch.

- Dispose of asbestos-containing wastes as soon as practical at a disposal facility that is permitted to accept asbestos. Contact the Field Environmental Representative for a list of approved disposal sites for asbestos-containing wastes.

2.3.2 PCB Waste

In some states, PCB wastes are hazardous wastes and all hazardous waste requirements must be followed in addition to those listed in this procedure. **Check with the Project Environmental Coordinator to determine if there are any additional state-specific requirements that may apply.**

- PCB wastes may be stored for 30 days without any special storage requirements.

- PCB wastes may be stored up to one year within an EPA-defined storage area. Contact the Project Environmental Coordinator for assistance on setting up a PCB waste storage area.

- As a minimum, store liquid PCB wastes in DOT-approved containers or on pallets with containment designed to capture any drips or leaks.

- Protect storage containers or equipment from weather.

- Mark PCB wastes with the proper PCB label before being placed into storage. The basic PCB label is 6"x6", white or yellow, which can be reduced as small as 2"x2".

- Mark all PCB wastes with the date that the item was removed from service or the date that the waste was generated and enter this information on the PCB waste log. Mark the storage area with a sign.

- Company vehicles can only be used to transport PCB wastes from a Company location where the waste was generated to another Company location where the waste will be stored. Placards are required if transporting:
  - o More than 99.4 pounds of PCB waste in containers
  - o One or more PCB transformers with 500 ppm or more PCBs.
- Check containers before and after loading to make sure that they are in good condition, are not leaking, and that all covers are secured.
- A hazardous waste manifest must accompany each shipment of PCB waste.
- Contact the Project Environmental Coordinator for a list of Company approved PCB disposal facilities. Dispose all PCB wastes at an approved facility.
- Once the PCB waste has been shipped to an approved disposal facility, the owner or operator of the disposal facility shall send the manifest and acknowledgement of receipt to the generator identified on the manifest which accompanied the shipment of PCB waste within 30 days of the date the disposal facility received the waste. If an acknowledgement of receipt is not received with the manifest, the generator shall confirm by telephone by the close of business that the disposal facility received the manifested waste and document the acknowledgement in the PCB log. The disposal facility should also send a Certificate of Disposal within 30 days of actual disposal of the waste.

2.4 Universal Waste

Common wastes include, but are not limited to: batteries, thermostats, and fluorescent light bulbs.

- If any universal waste is generated during construction, contact the Field Environmental Representative for storage and disposal instructions.